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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,442	10/29/2005	Janne Kerovuo	D2000-1WUS	8134
29062 7590 04/08/2009 VERENIUM CORPORATION Intellectual Property Department P.O. Box 910550 SAN DIEGO, CA 92191-0550				
EXAMINER				
SWOPE, SHERIDAN				
ART UNIT		PAPER NUMBER		
1652				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Notice of Allowability****Application No.**

10/501,442

**Applicant(s)**

KEROVUO ET AL

**Examiner**

SHERIDAN SWOPE

**Art Unit**

1652

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to September 25 and November 20, 2008.
2. ☒ The allowed claim(s) is/are 1,9,24,27,31,35,36,40,49,52,94,101,165,238,239 and 242-245.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **DETAILED ACTION**

The Notice of Allowability mailed February 6, 2009 is herein withdrawn and replaced with the Notice of Allowability below.

Applicants' responses of September 25 and November 20, 2008, to the Action of March 25, 2008, are acknowledged. It is acknowledged that Claim 16 has been cancelled, Claims 1, 9, 24, 27, 31, 35, 36, 40, 49, 52, 101, and 165 have been amended, and Claims 242-245 have been added. Claims 1, 9, 24, 27, 31, 34-36, 40, 43, 45, 49, 51, 52, 54, 55, 61, 68, 81, 86, 87, 91, 93-95, 97-99, 101, 103, 106, 107, 111, 121, 123, 126, 136, 137, 141, 145, 146, 151, 153, 158, 164-166, 169, 170, 173, 174, 177-179, 190, 191, 194-197, 199, 201, 203-205, 208, 209, 212, 214-216, 218-221, 223-226, 229 and 231-233 and 236-245 are pending. Claims 34, 43, 45, 51, 54, 55, 61, 68, 81, 86, 87, 91, 93, 95, 97-99, 103, 106, 107, 111, 121, 123, 126, 136, 137, 141, 145, 146, 151, 153, 158, 164, 166, 169, 170, 173, 174, 177-179, 190, 191, 194-197, 199, 201, 203-205, 208, 209, 212, 214-216, 218-221, 223-226, 229 and 231-233 and 236, 237, and 241 were previously withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions. Claims 1, 9, 24, 27, 31, 35, 36, 40, 49, 52, 94, 101, 165, 238-240 and 242-245 are hereby examined.

### ***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

***Claims***

Cancel Claims 34, 43, 45, 51, 54, 55, 61, 68, 81, 86, 87, 91, 93, 95, 97-99, 103, 106, 107, 111, 121, 123, 126, 136, 137, 141, 145, 146, 151, 153, 158, 164, 166, 169, 170, 173, 174, 177-179, 190, 191, 194-197, 199, 201, 203-205, 208, 209, 212, 214-216, 218-221, 223-226, 229 and 231-233 and 236, 237, 240, and 241.

Amend Claims 1, 27, 31, 35, 36, 40, 49, 52, 94, 101, 165, 238, 239, and 242-245 as follows.

For Claim 1, line 1, replace --nucleic acid-- with --nucleic acid molecule--.

For each of Claims 1(a) and (c), delete the phrase --90%, 91%, 92%, 93%, 94%--.

Replace Claim 1(e) with:

--(e) the nucleic acid sequence of (c) or (d) further comprising a heterologous sequence encoding a signal sequence, a catalytic domain, and/or prepro domain from a different pectate lyase operably linked to the nucleic acid sequence or encoding a signal sequence and/or prepro domain from a non-pectate lyase protein linked to the nucleic acid sequence.—

Replace Claim 1(f) with:

--(f) a sequence complementary to the full-length nucleic acid of (a), (b), (c), (d), or (e).—

Replace Claim 24 (b) with:

--(b) a nucleic acid sequence complementary to the full-length sequence of (a).--

For Claim 27, lines 2-3, delete --10, 15, 20, 25, 30, 34, 40, 50,--.

For Claim 27, line 3, delete the phrase --a sequence comprising--.

Replace Claim 31 with:

--Claim 31 An amplification primer sequence pair for amplifying a nucleic acid encoding a polypeptide having a pectate lyase activity, wherein the primer pair is capable of amplifying the nucleic acid molecule of claim 1 or claim 24, or a fragment thereof encoding a polypeptide with pectate lyase activity.--

For Claims 35, 36, 40, line 2, replace --the sequence-- with --the nucleic acid molecule--.

Replace Claim 49 with:

--Claim 49 An antisense oligonucleotide consisting of a nucleic acid sequence complementary to or capable of hybridizing under stringent conditions to the nucleic acid sequence of claim 1 or claim 24, or a fragment thereof

wherein the stringent conditions include a wash step comprising a wash in 0.2 times SSC at a temperature of about 65 degrees C. for about 15 minutes.--

Replace Claim 52 with:

--Claim 52 A double-stranded inhibitory RNA (RNAi) molecule comprising a fragment of the nucleic acid sequence of claim 1 or claim 24.--

Replace Claim 94 with:

--Claim 94 An array comprising the nucleic acid molecule of claim 1 or claim 24, wherein the nucleic acid molecule is immobilized.--

For Claim 101, line 4, replace --the sequence set forth in-- with --the nucleic acid molecule of--.

Replace Claim 165 with:

--Claim 165 A method for overexpressing a recombinant pectate lyase in a cell

wherein, the method comprises expressing a vector comprising the nucleic acid molecule of claim 1 or claim 24,

wherein, overexpression is achieved by use of a high activity promoter, a dicistronic vector, or by gene amplification of the vector.--

For Claims 238 and 239, line 1, replace --nucleic acid-- with --nucleic acid molecule--.

Replace Claims 242-245 with the following.

--Claim 242 The isolated, synthetic or recombinant nucleic acid molecule of claim 1, wherein the nucleic acid sequence has at least 95% sequence identity to SEQ ID NO: 77 or SEQ ID NO: 131 and encodes a polypeptide having pectate lyase activity.--

--Claim 243 The isolated, synthetic or recombinant nucleic acid molecule of claim 1, wherein the nucleic acid sequence has at least 97% sequence identity to SEQ ID NO: 77 or SEQ ID NO: 131 and encodes a polypeptide having pectate lyase activity.--

--Claim 244 The isolated, synthetic or recombinant nucleic acid molecule of claim 1, wherein the nucleic acid sequence has at least 98% sequence identity to SEQ ID NO: 77 or SEQ ID NO: 131 and encodes a polypeptide having pectate lyase activity.--

--Claim 245 The isolated, synthetic or recombinant nucleic acid molecule of claim 1, wherein the nucleic acid sequence has at least 99% sequence identity to SEQ ID NO: 77 or SEQ ID NO: 131 and encodes a polypeptide having pectate lyase activity.--

Authorization for this examiner's amendment was given by Jennifer Risser on January 28, 2009.

***Allowable Subject Matter***

Claims 1, 9, 24, 27, 31, 35, 36, 40, 49, 52, 94, 101, 165, 238, 239 and 242-245 are allowed.

The following is an examiner's statement of reasons for allowance:

All allowable claims, Claims 1, 9, 24, 27, 31, 35, 36, 40, 49, 52, 94, 101, 165, 238, 239 and 242-245, are limited to isolated nucleic acid molecules, vectors, host cells, and methods of making the encoded protein of the nucleotide sequence of SEQ ID NO: 77 or 131 or encoding the amino acid sequence of SEQ ID NOs: 78 or 132. The utility of said polynucleotides, as encoding a pectate lyase, is credible based on expression in heterologous host cells and analysis by an enzymatic assay (Example 5; Fig 5).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheridan L. Swope whose telephone number is 571-272-0943. The examiner can normally be reached on M-F; 9:30-7 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/SHERIDAN SWOPE/  
Primary Examiner, Art Unit 1652